

BREATHING PATTERN DISORDERS/ DYSFUNCTIONAL BREATHING

Many things affect your ability to breathe and which muscles you use to breathe; for example a slumped posture may lead to a person using the muscles in the neck and shoulders more. Because when a person is slumped, breathing from the lower chest via the diaphragm is limited as there is little room for the diaphragm to descend and expand the lungs from the bottom. The use of upper chest breathing may lead to a person breathing more quickly and feeling breathless. This can lead to a cycle of breathlessness and other related symptoms. A breathing pattern which causes symptoms is called “dysfunctional breathing” or a “breathing pattern disorder”.



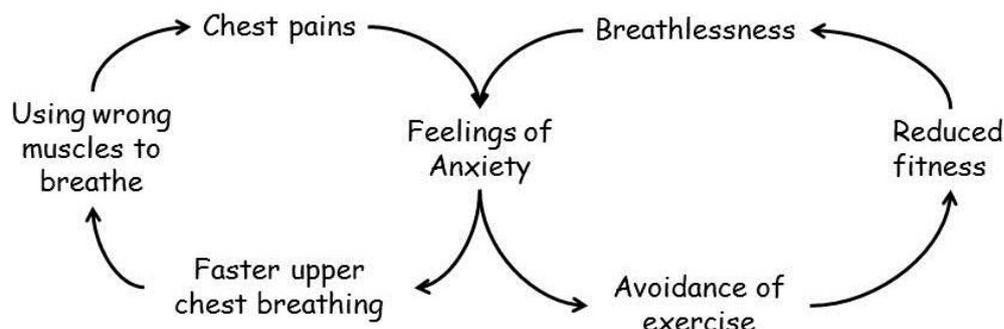
Poor posture with no space to breathe



Good posture with space to breathe

There are many different situations that may lead to dysfunctional breathing; especially those that lead to mouth breathing eg; sinus problems, poor posture, poorly controlled asthma or other lung pathologies such as COVID. Stressful or traumatic life events are also common triggers as are hormonal changes, excessive secretions, and trauma to the airway such as might occur following a difficult intubation or tracheostomy. This might happen if a person needs a tube to breathe for mechanical ventilation as part of treatment on an Intensive Care Unit (ICU). This list is not exhaustive.

Using an abnormal breathing pattern can lead to a wide variety of symptoms which can be: **mechanical** (the direct effect of using the wrong muscles) eg chest pains or abdominal bloating; **biochemical** (the effect of altered blood biochemistry and stress hormones) eg palpitations or headache and **psychological** eg feelings of panic or health anxiety. All of these affect each other leading to cycles of symptoms. For example



What is a normal breathing pattern?

At rest you should breathe through your nose (both in and out) with your mouth closed. The majority of your breath should go down to the bottom of your lungs. You should feel your abdomen move outwards as you breathe in. A normal breathing rate for adults is 12-15 breaths per minute. Normally you should not sigh, yawn or clear your throat very often (eg more than 2 or 3 times per day)

Treatment

Normalising your breathing pattern and addressing any issue which may lead to a symptom cycle is required. This works best when you identify triggers, cycles of symptoms and things which improve your symptoms. Keeping a symptom diary can help you identify patterns. This leaflet is designed to help you self-treat, but you may need the assistance of a specialist respiratory physiotherapist to assist you.

Addressing underlying or compounding issues:

This will maximise the chance of success for you. Below is a list of common underlying or compounding issues.

Posture: you need to think about how you sit or stand all day. If you sit with your feet up on your bed to watch TV or sit on an unsupportive seat such as a very soft sofa this will lead to a slumped posture and will make it difficult to retrain your breathing. Try sitting on a dining chair and sitting with your feet on the floor. Your back, neck and head posture is important to ensure your wind pipe is not bent, that you have space to breathe and also to avoid using the muscles of the neck and upper chest. In a good posture you should not feel straight and stiff, you should feel upright with your chin in; your jaw and shoulders should feel relaxed. Look at the "Good posture" photo on page 1.

Sinus Problems: address any sinus problems as these will prevent you breathing through your nose. Breathing through your nose helps slow your breathing which naturally helps breathing go down to the lower part of your chest. There are other benefits of breathing through your nose eg filtering, heating and moistening the air that you breathe. This will help calm down irritable airways. If your nose and sinuses have infected secretions then you will breathe these in and potentially increase the risk of chest infections. **Nasal rinsing** can be very effective at clearing your sinuses (see useful links), as can sinus clearing exercises.

Sinus clearing exercises.

- 1) Blow your nose gently (and repeatedly if necessary) to clear your nose. Do not blow hard as this may make the membranes in your nose sore and inflamed.
- 2) With your mouth closed. Pinch your nostrils closed and hold your breath creating a little back pressure. Now tip your head backwards and forwards 3 times slowly.



You should repeat this 3 to 4 times per day or more often if needed.

You should clear your nose before you use any nasal sprays you may be prescribed to ensure the medications land on the nasal membrane (not mucus) where it can act.

Secretions: If you have secretions on your chest this can make you cough repeatedly disrupting your breathing pattern. Having secretions on your chest can make you feel breathless and if there are a lot of secretions this can potentially block off airways and reduce the ability of your lungs to exchange oxygen and carbon dioxide. Also having secretions on your chest can provide the ideal conditions for a chest infection to take hold. Keep a close eye on the colour of your secretions. If your secretions are not clear or white this can be a sign that you have an infection and should contact a medical professional. Keeping your secretions loose by making sure you are well hydrated can help you clear them, as can doing chest clearance exercises such as the active cycle of breathing technique (ACBT). Please see “useful links” for more instructions.

Reflux: reflux can be part of a breathing pattern disorder as if you are not using your diaphragm effectively it will not squeeze the oesophagus slightly with each breath. Also reflux can cause an irritable airway and cough. Both of these can exacerbate a poor breathing pattern so should be managed. If you have symptoms you should discuss these with an appropriate medical professional.

Stress Management: life stress is a common trigger; try to become aware of your early stress symptoms, such as a headache or sensitivity to noise. Become well-practiced at a relaxation technique to employ in times of stress. You may need a lot of practice before you are skilled enough at relaxation techniques to manage an acute episode of stress. You should also pay attention to any other methods to reduce stress such as being organised, have a strong daily routine including; daily exercise outside such as a walk or cycle in the fresh air and relaxation. Minimising screen time particularly close to bedtime may also be useful. See “useful links” for some ideas.

History of Traumatic Event:

Traumatic events such as abuse, assault, an Intensive Care Unit (ICU) stay or significant bereavement are powerful triggers for a poor breathing pattern. You should seek appropriate counselling or psychological intervention particularly if you have flashbacks or other persistent distressing symptoms.

Breathing Exercises (copied from <https://www.physiotherapyforbpd.org.uk/self-help/>)

1. Lie comfortably on your back with a pillow under your head and knees. Place one hand on your stomach, with the other hand relaxed by your side.
2. Gently close your mouth, lips together and keep your jaw loose.
3. Breathe in gently through your nose, feeling your tummy rise and expand ‘like a balloon’ as you breathe in. The breath should be unforced and silent.
4. Breathe out lightly through your nose if possible, without pushing, keeping your stomach relaxed.
5. Make sure you relax and pause at the end of each breath out.
6. When you breathe in, your upper chest should be relaxed and not moving. From time to time place your hand on your upper chest to check this.
7. As you repeat this sequence be aware of any areas of tension in your body and concentrate on ‘letting go’, particularly jaw, neck, shoulders and hands.

You need to practise as often as you can. Try little and often, e.g. three minutes every hour. Progress to practising whilst sitting, then standing and finally walking.

As your body adapts to this way of breathing, you will find it requires less time and energy and is more relaxing. Remember, the more time put into practising, the sooner you will feel back in control.

Useful links

Physiotherapy for breathing pattern disorders

<https://www.physiotherapyforbpd.org.uk/self-help/>

Stress Management and Relaxation

<https://www.helpguide.org/articles/stress/relaxation-techniques-for-stress-relief.htm>

Nasal Rinsing

<https://youtu.be/DYZDeiOVJx0>

Derriford physiotherapy department you tube channel, many chest clearance techniques including the Active Cycle of Breathing

https://www.youtube.com/playlist?list=PLUDV2QE7jwLC9JzGgbxXl1TQJZ5En5K_4